

WHAT IS CLAIMED IS:

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1. A thermophilic enzyme having  $\beta$ -glycosidase activity which comprises the amino acid sequence of SEQ ID NO: 2 in which one or a plurality of amino acid residues may be deleted, replaced or added.

2. The enzyme of claim 1, having an optimum temperature of 100° C or higher.

3. A DNA which is capable of hybridizing to the nucleotide sequence of SEQ ID NO: 1 or to the complement thereof under such conditions that the hybridization is carried out in 6xSSC and 50% formamide at 42 °C and the washing process is carried out in 6xSSC and 40% formamide at 25 °C, and which encodes a thermophilic enzyme having  $\beta$ -glycosidase activity.

4. The DNA of claim 3, which encodes the enzyme of claim 1.

5. A recombinant vector containing the DNA of claim 3 therein.

6. A host cell transformed with the recombinant vector of claim 5.

7. A process for producing the enzyme of claim 1, comprising culturing a host cell transformed with an

expression vector containing a DNA encoding the enzyme and then collecting the enzyme from the resultant culture.

8. A process for the hydrolysis of a  $\beta$ -glycoside having a long alkyl chain at the reducing end, with a thermophilic enzyme having  $\beta$ -glycosidase activity which comprises the amino acid sequence of SEQ ID NO: 2 in which one or a plurality of amino acid residues may be deleted, replaced or added.

9. The process of claim 8, wherein the long alkyl chain is an alkyl group having carbon atoms of 8 or more.

10. The process of claim 8, wherein the hydrolysis is carried out at a temperature of 85° C or higher.

11. The process of claim 8, wherein the hydrolysis is carried out at a temperature of 100° C or higher.

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